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Vol. XVII TORONTO, JANUARY, 1926 No. 1

SPECIAL ARTICLES

SILICOSIS: ITS RELATION TO TUBERCULOSIS
A. R. Riddell, B.A., M.B.

HIERONYMUS FRACASTORIUS DE CONTAGIONIBUS, MORBISQUE CONTAGIOSIS ET EORUM CURATIONE, LIBRI TRES
Honourable William Renwick Riddell, LL.D., D.C.L.

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The Official Organ of the
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DR. GORDON BATES
Editor

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The Public Health Journal

Vol. XVII. TORONTO, JANUARY, 1926 No. 1

Silicosis: Its Relation to Tuberculosis

A. R. Riddell, B.A., M.B.

[Prepared as thesis for Degree, D.P.H., Sept. 1, 1925.]

History

That workers exposed in the course of their work to dusty atmospheres suffer more from lung disease than those not so exposed has been recognized for centuries. It would seem, however, that the first adequate attempt definitely to relate occupation and certain lung conditions was made by Ramazzini in the early part of the eighteenth century. During the latter part of that century, following Laennec's marvellous work, the tendency was to consider all such conditions as due to tuberculosis. This tendency is not surprising, particularly as tuberculosis was undoubtedly often present, then as now, in the individual suffering from a condition primarily induced by dust inhalation. In 1824[1] Allison published a paper on pneumoconiosis, and pointed out differences between it and tuberculosis. Of late years much work has been done and many articles have appeared on the subject. These indicate the view as accepted that dust inhalation is harmful, producing diseased conditions of the lungs in exposed persons: and that of all dusts silica dust is the most harmful.

The Harmful Action of Silica Dust

It has frequently been stated that fibrosis of the lung is produced in the individual by any given dust in so far only as this dust contains silica. It should be remembered, however, that Klotz[2] in 1914 demonstrated the possibility of inhaled carbon producing pneumoconiosis and extensive lung fibrosis, of the same intensity as that produced by silica, but operating more slowly. It, therefore, would not appear that these occupational lung conditions depend on silica only being present in the air inhaled by those exposed. Nevertheless it seems certain that silica-containing dusts are chief amongst disease producers, and that in general in so far as lung fibrosis is concerned the effect is in relation to the amount of silica contained.

The action of inhaled dusts by which lung disease is produced has either to do with the physical properties of the dust or with chemical changes induced by the presence of the inhaled material in the lungs. In the case of dusts tending to produce bronchitis rather than fibrosis it is probable that the physical properties are predominant; but in dusts such as silica it has been shown that the more important action is chemical[3]. From time to time it had been maintained that silica dust because of its extreme hardness, composed as it is of particles with knife-like edges, was more harmful than other dusts not having these physical characteristics in anything like the same degree. Watkins-Pitchford[4], Mavrogordato[5], and others have shown that the particles which enter the lungs are extremely small—5μ—2μ, with many of 1μ or less. It is maintained by them with reason, it would appear, that the terms "hardness" and "sharpness" applied to particles of such small dimensions are quite without significance compared to the tissues with which they are in contact, because of their slight mass. It is therefore accepted at the present time that inhaled silica dust, because of the chemical characteristics of silica, causes the blocking of lymphatics and provides a stimulus to the growth of fibrous tissue resulting in lung fibrosis, the disease—silicosis.

Clinical Considerations

Silicosis is defined as a fibrotic condition of the lungs induced by the inhalation of silica dust. This fibrosis is more or less slowly produced, depending, it would seem, on individuality and on the quantity of silica in the dust inhaled. Clinically it is difficult to recognise. The history is of particular importance, especially that of exposure. In early stages there may be a complaint of shortness of breath, more often on increased exertion. This symptom may, however, not be at once complained of, but only obtained after careful questioning. The only sign may be a general diminution of the breath sounds. In more advanced cases the shortness of breath becomes more pronounced, until, in very severe cases, it is marked enough to constitute a total disability. Sometimes there is a history of cough with expectoration, the latter perhaps blood-streaked, occasionally that of small haemoptosis. As the disease progresses, the chest tends to be rigid and held in partial inspiration, expansion is restricted, sometimes extremely, with indrawing of the lower interscostal spaces, the act of breathing bringing into play the accessory respiratory muscles. There is frequently no change in the percussion note. There may be, however, an impaired note corresponding to the fibrosed area; more often even in the presence of considerable fibroses, coexisting emphysema interferes with the demonstration of this. Auscultation demonstrates diminished breath sounds all

over the chest. This is the most constant clinical finding. Occasionally dry rales which are not characteristic of the condition or rhonchi are heard. More often crackling sounds are made out at the lung basis, suggesting separation of the pleural surfaces. The temperature in uncomplicated cases is not elevated.

For accurate diagnosis the X-ray is essential. By it the degree of involvement can be determined and doubtful cases checked. Pancost[8] from X-ray studies divides the condition into three stages. The first stage (illustrated by Cut 2) he describes as showing increase in the linear markings with widening of the hili shadows, but not characteristic of this condition only. Cut 1 shows an X-ray picture of a normal chest. It has been included for purposes of comparison. The second stage, Cut 3, shows in addition a diffuse mottling scattered throughout the lung, more especially in the second zone, around the root. The third stage is illustrated in Cut 4. In this stage the diffuse mottling is more intense, and in places is agglomerated into dense areas. Sometimes the shadows are massive, resembling areas of consolidation. These massive shadows are seen in the upper two-thirds of the lung. Below this what shadows might appear are partially masked by emphysema. The trunk shadows are much increased, and those of the descending bronchi extend more or less distinctly to the diaphragm which usually shows characteristic peaking. In the second and third stage it is not always possible from the X-ray picture to rule out a tuberculous condition. In silicosis the shadows are more uniform, involving both lungs. Tuberculosis may be ruled out, however, with a certain degree of certainty by the condition of the patient in relation to the lung involvement, by the temperature record, and by frequent sputum examinations. Cut 5 is the X-ray picture of a stone cutter's chest. It shows silicosis complicated by a tuberculous lesion in the right apex.

Pathology

Pathologically the condition is of interest. Specimens, other than those of advanced cases or those complicated by tuberculosis, are very rarely obtained except as the result of accident, for it is only in most severe cases that silicosis causes great disability or results in death. Most deaths occur in this disease from intercurrent infection, particularly tuberculosis.

The one point on which there appears to be general agreement amongst all authors on the subject is that in silicosis a fibrosis is the essential lesson. As to the method by which this fibrosis is produced there are differences of opinion. Not all dust inhaled reaches the lungs. By far the most is got rid of by the protective mechanism of the respiratory tract. Dust tends to be caught in the upper air passages

and either swallowed or expectorated. When the amount inhaled is in excess, some particles penetrate to the alveoli. Dusts reaching the alveoli are caught in "dust cells." These cells are endothelial in origin, and are supposed to be derived from the endothelial structures in the proximity of the alveoli. The function of dust cells is to transport dust particles, at least in part, by way of the lymphatics, and assist in getting rid of them. When silica is absent these dust cells tend to disintegrate and set free their load of particles. Silica, because of its chemical characteristics, causes the cells to be preserved, and, according to some authorities, renders them capable of growing white fibres[7]. Thus, silica not only increases the tendency to lymphatic blockage, but also stimulates the growth of fibrous tissues. More particularly is the material conveyed by the lymph channels deposited in the regional aggregations of lymphoid tissue, which become fibrosed forming pseudo tubercles. The lymphatic drainage of the lungs is essentially hili-wards, but as direct channels leading toward the hili become blocked and fibrosed a drift develops outward, toward the pleural surfaces, in order that advantage may be taken of anastomiosing channels which may lead eventually back to the hili. Thus much material becomes deposited in the pleurae, with subsequent thickening of these structures.

On opening the thorax of a subject who has suffered from marked silicosis, the lungs, instead of collapsing, bulge outward from the chest cavity. The surfaces are rough and covered by dense fibrous tissue. The interlobar fissures tend to be obliterated, and adhesions are found between the visceral and parietal pleura and the diaphragm. The bronchial glands are dense and enlarged. The weight of the lungs is increased. On section the pleurae are found thickened. The lung tissue offers considerable resistance to cutting. There is grating of the knife. Certain areas, especially the upper portions of the lungs, are non-air holding and blue-grey in colour. Sections of these denser areas sink when placed in water. What portions remain air holding are emphysematous and contain scattered areas of congestion and fibrosis. The blood vessels show sclerosis. They may be thrombosed. Sections of the denser areas under the microscope show a large proportion of the lung tissue replaced by fibrous tissue. This fibrous tissue is in whorl formation and may be undergoing hyaline degeneration. The fibrous tissue contains pigment. A few sclerosed blood vessels are seen in this tissue. What alveoli remain have thickened walls and are filled with plasma cells and endothelial cells containing pigment. The interstitial tissue between the alveoli contains young blood vessels surrounded by various types of cells, among which are seen pigment-filled endothelial cells. The less dense areas show the same condition, less

marked, together with an advanced degree of emphysema. The pleura shows thickening and infiltration, and many cells containing pigment.

Chemical examination reveals the fact that the lungs contain much silica. In one case portions of the denser areas contained as much as 33.36% silica expressed as SiO_2, this percentage being of the ash of the dried lung. Cut 6 demonstrates the gross appearance of a lung from a fatal case of silicosis.

The Relation with Tuberculosis

Mortality records indicate that there exists a definite relationship between the inhalation of certain dusts other than silica and such diseases as pneumonia, asthma, and bronchitis. This relationship has not been shown in the case of inhalation of silica dust if bronchitis be excepted. With tuberculosis the situation is different.

The disease which results from silica dust inhalation is known by several names, such as silicosis, miner's phthisis, etc. It is of two types: a simple fibrosis in which the silica content of the lung is greatly increased, and this condition complicated by an often rapidly progressing tuberculosis. Wherever studies of the question have been made it has been found that the tuberculosis mortality occurring at a later period of life is in excess among workers exposed to silica as compared with the mortality rate of the general population, and even as compared with the prevailing rate for the wives and families of these workers; also, that the death rate from other respiratory diseases is higher. It is contended that wherever such a situation[8] is found, the condition is due to the inhalation of injurious dust. These investigations have been made in many parts of the world, most often in connection with mining. One investigation is of interest as illustrating this state of affairs in an industry other than mining. Dr. Herbert Drury of the Department of Health, Yale School of Medicine, investigated the mortality in a community in Connecticut, agricultural except for the presence of an axe factory employing eight hundred men. The physician and superintendent had been in the employ of the company for twenty years, so that it was possible to trace nearly all death certificates. The results of the investigation were:

Death rate from tuberculosis,				entire population of factory district	200	per	100,000
„	„	„	„	state as a whole	150	„	„
„	„	„	„	factory population	650	„	„
„	„	„	„	polishers and grinders	1900	„	„

The polishers and grinders are those particularly exposed to silica dust inhalation.

Distribution

Silicosis has been encountered wherever mining operations are carried on in silica-containing rock. As much of the most important mineralization by the precious metals is in this type of rock, the condition is widespread. Investigations have been made amongst the workers in the gold mines of South Africa and Australia, the tin mines of England, and the zinc mines of Missouri. Reports of these are of particular interest. In most parts of the world further cases have been discovered in workers from many industries other than mining. Bearing in mind the foregoing, it may be asked, what is the situation with reference to Ontario? It would appear that until recently little or no attention was given the subject here. In 1921, however, Elliott[9] showed that silicosis not only existed among the workers in certain of the northern Ontario gold mines but arose there. The Division of Industrial Hygiene, Ontario Department of Health, has encountered a score of cases, the results of several small surveys amongst quarry workers. A number of cases in workers from industries other than mining or quarrying have appeared at the Diagnostic Chest Clinic of that Department in various parts of the province. The industries from which the cases last referred to appeared are sufficiently representative to indicate the possibility of many other such cases being discovered, if search were made. They are stonecutting and dressing, monument works, foundries, iron and steel works where moulding is done, and implement manufacturing concerns (particularly the polishers and grinders).

In the past two years the Division of Industrial Hygiene has had its attention drawn to the deaths of two workmen from one implement manufacturing plant. The workers were grindstone operators. Both were suffering from silicosis. One death[10] of a quarry worker has also occurred during the same period. This man died from uncomplicated silicosis. His case is of particular importance in that he was a member of a group previously examined by the Division of Industrial Hygiene. Cut 4 is a copy of the X-ray picture made at the examination referred to.

Practical Considerations, Including Compensation

Because of Ontario's industrial expansion, particularly in trades in which silica is encountered, the problem of silicosis, and its relation to tuberculosis, may well come to be recognised here as a very important public health problem. Much gratification is felt in public health circles over the fall in death rate from tuberculosis which has taken place during the last few years. It is suggested that if this death rate is to be further reduced, more attention must be paid to industry's role in relation to the incidence of tuberculosis[11]. Special attention should be given trades where there is a silica dust hazard.

It is at least possible that the danger of having silicosis complicated by tuberculosis is increased in certain dusty trades by the means employed to lessen the dust hazard; *i.e.*, water. Workers in these trades are now exposed to dusty atmospheres with added moisture, which makes for the growth and preservation of disease producing organisms, often in situations remote from sunlight and free air circulation. Mavrogordato[12] indicates that tuberculosis is a more common complication among the sufferers from silicosis in the gold mines of the Rand at present than it was formerly. It would be interesting to know whether simple silicosis or silicosis with tuberculosis, is the more serious, from the standpoint of industry and the industrial worker. There can be no doubt which is the more serious from the standpoint of the general public.

To the general practitioner to whom X-ray facilities are not immediately available, the diagnosis of silicosis is difficult because of the meagre signs and symptoms often presented. For this reason occupational history is of the greatest importance. Silicosis may be present in individuals exposed to dust in the course of their daily work, and this condition should be kept in mind whenever they complain of symptoms referable to the respiratory tract. In most cases it should be possible to check diagnosis by subsequent X-ray examination. It is of the greatest importance that the condition be recognised before great disability occurs, in order that steps may be instituted to remove the sufferer from further exposure.

In silicosis compensation constitutes a problem which requires very careful consideration. Regulations generally in force governing the compensation of accident and other occupational diseases have been found inadequate in countries sufficiently progressive to have recognised the importance of the problem. For this reason in Great Britain and South Africa special regulations have been made with reference to compensation in this condition, particularly in the mining industry, because of the prevalence of silicosis there, and special machinery has been created for its diagnosis and control. Last year a bill was introduced in the New York State legislature along the same lines as those in force in the other countries mentioned.

These special regulations provide for the diagnosis of silicosis by specialists, who examine every case reported and fix the degree of disability according to set standards. Compensation is based on a sliding scale according to the degree of disability discovered, and is made applicable to workers who no longer expose themselves to silica dust.

In addition this compensation law provides for the periodic examination of all workers exposed to silica dust, in order that cases may be

discovered and the exposure discontinued before serious disabling conditions arise.

There are three main reasons why compensation in silicosis presents peculiar difficulties. These are:

(1) The condition once established is permanent.

(2) Only very severe cases, or those less severe but complicated by tuberculosis, are totally disabled.

(3) Diagnosis is so difficult that without special arrangements only those cases presenting total disability will be brought to the attention of compensation boards. When they have reached this stage, progress cannot be arrested, and for practicable purposes they constitute death claims.

Conclusions

Silicosis is widespread, and may arise in any industry using silica.

It is difficult to diagnose.

It is very frequently complicated by tuberculosis.

When silicosis is present, tuberculosis is often rapidly progressing.

The incidence of complicated cases may be a factor in the general tuberculosis incidence.

Compensation in silicosis presents peculiar difficulties, requiring special arrangements for the detection of cases, their removal from exposure, and their compensation.

Workers exposed to silica should be subject to periodic physical examination.

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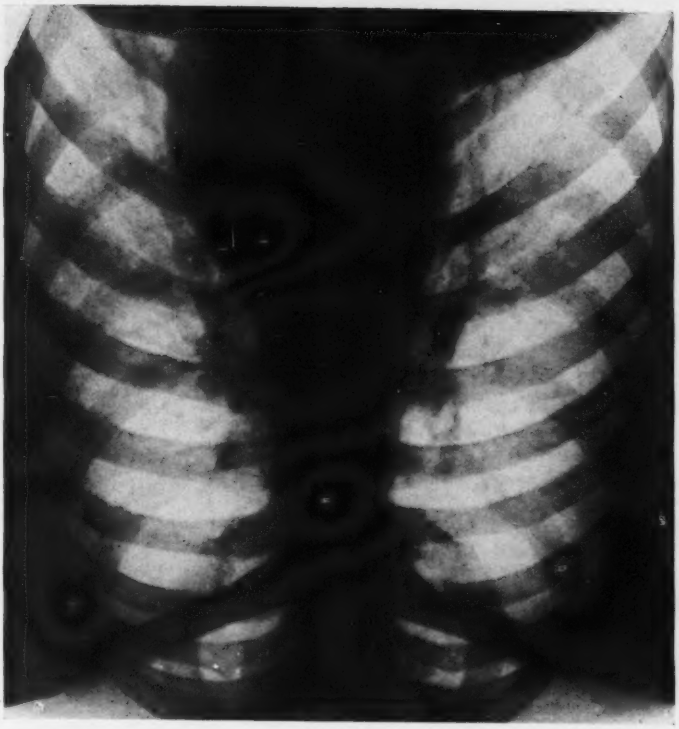

FIG. 1

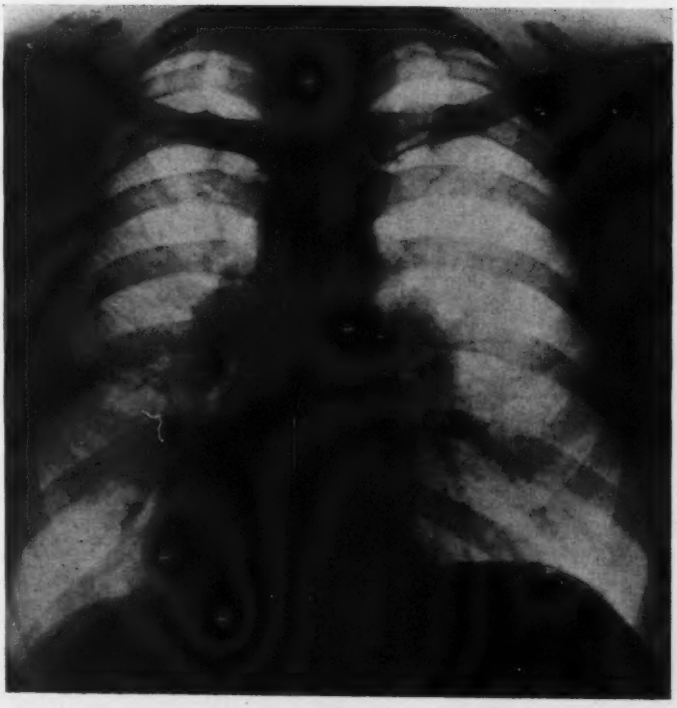

FIG. 2

FIG. 3

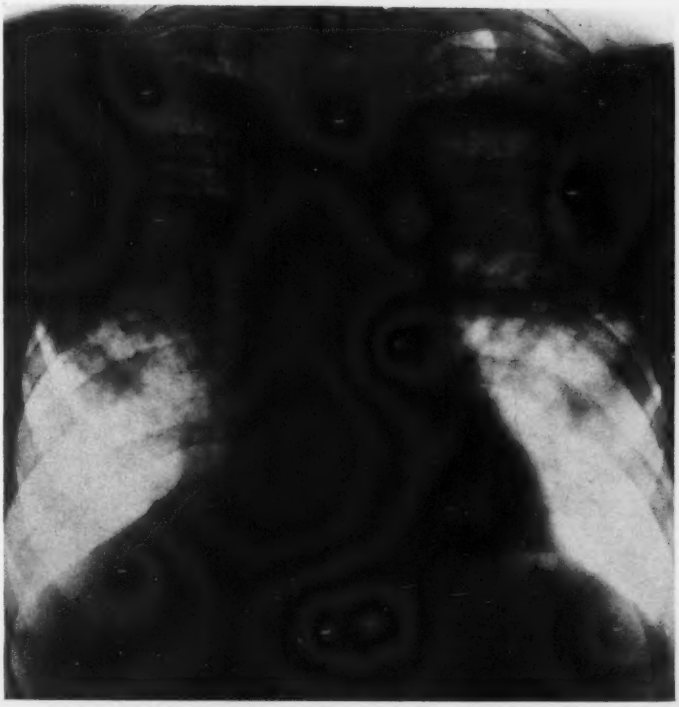

FIG. 4

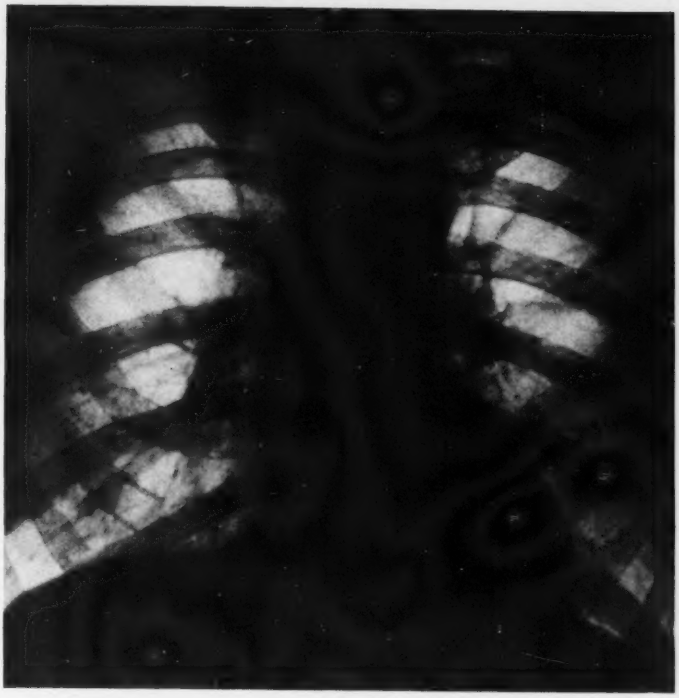

FIG. 5

FIG. 6

Hieronymus Fracastorius de Contagionibus Morbisque Contagiosis et Eorum Curatione, Libri Tres

By The Honorable William Renwick Riddell, LL.D., D.C.L., etc.,
President, Canadian Social Hygiene Council

(Continued from Dec. 1925 issue.)

Consequently it should not be wondered at if this Morbus Gallicus, which had not been known in our hemisphere for many centuries, should now break out; other new and unaccustomed diseases have come, brought in by time, such as Mentagra among the ancients (27), which not long afterwards disappeared. This very disease (syphilis) will pass away, and later on will have a resurrection, to be seen by our descendants, just as it is to be believed that it was seen in past ages by our ancestors; and there are no few indicia of this. A certain barber (—surgeon), a friend of ours, had a fairly old little book of tried prescriptions (28), of which, amongst others, there was one entitled "For Crass Scabies which Occurs with Pain in the Joints"; he, then, when the disease was quite new, remembering the medicine, consulted certain physicians as to whether he should use this medicine in the new contagion, which he thought to be meant by "Crass Scabies"; the physicians, after examining the medicine, however, strictly forbade its use because it consisted of mercury and sulphur. He would have been lucky and incredibly wealthy had he not consulted the physicians, for he obeyed and did not venture to try the medicine. When at length he tried it and recognized that it was the best medicine, he felt very much aggrieved that he did not use it sooner, and that the profit he should have had was taken from him by others. From this we can assuredly see that this disease had been seen in other ages.

There are those, too, who consider Avicenna to have meant it in his chapter on Olibanum when he says that Thus (Frankincense) applied with a mixture of vinegar and oil is effective against pain. (There is a pain, he says, with which appear on the body something like Verrucae and spreading like Formicae (29). But that has no bearing, inasmuch as Avicenna here is translating what Dioscorides (30) writes of Thus when he says that Formicant Verrucae in early stages and Impetigos, he relieves by treatment with vinegar and pitch, by which he understands Mirmecia) (31). To return, now, to our subject, the Morbus Gallicus is

to be considered amongst the new diseases and those which rarely occur—consequently both its causes and its principia are to be sought amongst which also rarely occur—and, too, are such as are not only common to many at once, but also in many regions—and this can assuredly be referred to no other cause than the constitution of the air. What that is and from what principia arisen is now to be inquired into.

Inasmuch as its analogies are to be found amongst contagions, its principia should also be analogous (as has been said) to those parts which receive the contagion; it is manifest that the principia of this disease are to be considered analogous to the crass and sordid phlegm (32). If, then, we have regard to the pustules which appear in this disease, or to the gummosities, or to the pains in the arms, everywhere we see nothing but mucor and sordities, and at length phlegmalentum (33), mucilaginous and crass. Consequently its seminaria (34), upon which every spontaneous contagion depends, we must consider to be somewhat similar; and, therefore, also we must consider the air from which every contagion has its origin to have contracted a condition of the same character, the seminaria of which are sluggish and analogous to the phlegm, and in their turn are productive of others like the former. Inasmuch as this contagion is erodent, its seminaria must be sharp, although hemmed in and buried in much viscosity (lentor).

Such, then, are the principia which we should consider this infection as having, and we must consider that into the air there crept a kind of sordid putrefaction which had an analogy to crass and sordid phlegm in us, but in what way and from what causes a condition of this kind was formed in the air, it is difficult to say. So far as reasonable conjecture can carry us, the following is certain:—

Whatever this cause and the origin may be, they must be among those which rarely occur; since at all events, this condition in the air which produces this rarely seen contagion is among those which rarely occur.

As we have said above, sublunary affairs are changed and affected in various ways by the things that are above, that is, the sky and stars —and it is apparent that there can be nothing which can affect the air so evilly in so many regions and over so much territory, or can produce such tremendous results when they do occur, except the conditions of sky and stars.

It has been demonstrated above what mighty and important things the stars can introduce here on earth when many of them are in conjunction; and such a conjunction our age has seen of three superior planets, Saturn, Jupiter and Mars, a conjunction which rarely occurs, and when it does occur often ushers in great events, as well because

these stars are the most potent as because such a conjunction is long lasting by reason of the slowness of the motion, particularly of Saturn and Jupiter. The astrologers seeing this conjunction prophesied great diseases to be impending. If, then, we are to say anything on probability, this is to be considered the fact.

It is, therefore, to be believed that on this conjunction of the stars taking place, there followed a tremendous traction of vapours, which, mixed with the air and agitated in various ways, brought in a sordid putrefaction from which were imported to us these seminaria, which have an analogy to sordid and mucous humors such as crass and mucous phlegm—whence at length was born that contagion which soon affected so many human beings and so many regions, partly by the air itself introducing these seminaria and principia, partly by the contagion passing from one to another. So much for the origin of the disease and its principia.

So far as its materia is concerned to which these principia have analogy—that this is the sordid and crass phlegm, as we have said, can be made perfectly manifest. For if we consider the pustules, all these are pinguid and dripping with an incredible amount of mucor—if, the gummosities, these consist of concreted phlegm—if the pains in the arms, these are persistent, extensive, troublesome at night.

On dissections being made a certain lentor is seen in the nervi (35) and the coextensive arms, from which no one can doubt that the materia of this contagion is mucous and crass phlegm.

The pustules, indeed, seem to have their origin from the least crass, the gummosities from the most crass, and the pains from the medium phlegm.

Then the contagion creeping through the mass of the blood and making food for itself in the phlegm, that part which is least crass and least fat was driven outward to the skin, and there by degrees was concreted into pustules; while that which was crasser and less fitted to be expelled as far as the skin, remained around the nervi (35) and arms, where it excited the most severe pains, and coagulated around certain parts and concreted into gummosities.

The contagion was not prompt to be caught by reason of the lentor in which the seminaria were buried, but it required a certain thorough heating of the bodies so that they by some process became seminaria and could be agglutinated to each other, propagate themselves by analogous food—which non-heated bodies cannot do like as though they could if coagulated. For the same reason also the contagion lay long dormant within the body before it made itself manifest—inasmuch as it crept sluggishly on account of the frigidity and crassitude of the

materia, then ate its way, and even attacked the solid parts by reason of the sharpness of the seminaria in the dense materia when they became active and putrefaction advanced.

The little ulcers appeared first around the pudenda, because there the first origin of the contagion took its beginning, and for the most part in coition.

These ulcers were disagreeable, as well because that part of the body is putid enough in itself, as because when the seminaria were dispersed from that part it happened that when one part was heated by treatment the disease appeared elsewhere.

The pustules for the most part began in the scalp, partly because that part of the body was in a way analogous by reason of the sordities and crassitude of the humor wherewith it was nourished, and partly because every evaporation is carried upward, while in every putrefaction evaporation is excessive.

Those in whose case there were many pustules had less of pains, inasmuch as much materia was excreted, and at the same time this is a symptom of less crass materia; on the other hand, in those in which it was crasser, more pains appeared and fewer pustules. The materia, indeed, which gave the pains was not fixed in the joints themselves, because it was too crass to penetrate the joints, wherefore it remained for the most part over the nervi (35) and arms. Moreover, it was more troublesome at night and after sundown, because the natural heat (36) is accustomed during the day to seek the exterior, being called for by Nature, ever vigilant over operations, to those members which are accustomed to be moved and excited by the light of the sun—wherefore it fostered these members and dissolved the ventosities which stretched the arms and nervi and tortured them; and at the same time it concocted (37) the materia. But at night the heat is accustomed to turn inward and to desert those members to which it is called out by Nature during the day; and consequently the pains are excited and the distentions are more increased, the materia being destitute of the fostering heat to dissolve the ventosities.

The years gliding by, a change, indeed, took place in this disease, inasmuch as the original condition which was in the air now ceased, and the disease had no other method of propagating itself but by contagion of one to another, by reason of which change it became fixed. Now, every contagion according as it departs the more from its first origin and principle, becomes the more dry and earthy on account of the adustion which continuously is joined to it; wherefore the contagion of the first period, nearer, as it were, to the source, appeared more sordid and pinguid; and more of the pustules, fewer of the pains occurred; in

the succeeding years, what was adust and crass gave fewer pustules and more pains; for, from the beginning, where there were more pustules, there were fewer pains, and where there were fewer pustules there were more pains.

Later on, and in these modern years, as though the contagion had grown senile, a still greater change took place; for many gummosities appeared, but the pustules were few, and they were dry, and the pains almost wanting, or much less severe, because the materia, by reason of crassitude, very easily was concreted into gummosities; but it was not easily expellible to the skin or capable of remaining around the arms. What does get out to the skin is a kind of thin phlegm, which acquires a certain saltness from adustion, for which reason it takes away (40) the pabulum brought to the roots of the hair, and it soon falls as in Porrigo, Alopecia and Dry Achores. Probably, too, the same thing now occurs in this disease which happens in Alphae (41), in which the hair falls on certain white mucilaginous materia making its way to the roots, for we have seen some whose beard had fallen out have a certain similar humor coextensive under the skin. This might now very easily come out in evaporation and secretion, which is formed from this materia and almost vitreous by coagulated vapors.

In whatever way it is produced we must consider that the decadence of this disease has begun, and that it will not be long before it will be unable to propagate itself, because, day by day, the materia is becoming more frigid and earthy, and in it, day by day, the seminaria become not only fewer but also weaker, for which reason this contagion is not now so easily taken as formerly it used to be—wherefore, moreover, it will at length come to pass that it will not be able to propagate itself, but will cease, and at a later time will recur when the same principia and the same causes themselves recur. It is, moreover, a familiar contagion in certain regions as in the island called Hispania (42) and other places near, for the reason, as we have said, that the same condition which length of time has brought to us is effective there to produce this disease in the same way as Egypt and Judaea (43) have a kind of familiarity with Elephantia.

We have now shown what originally were the principia and the causes of this new contagion, and in what it consists, and what analogy it has, and what are the accidentia of it, and its symptoms so far as have been determined up to the present time.

Notes

(27) Mentagra, chin disease, see note 3 *ante*.

(28) "Experimentorum", of experiences, tested recipes: originally experiments, but in post-Augustan Latin, the result of experiments, *i.e.*, tried prescriptions. The Barber was, of course, a Barber-Surgeon—possibly practising Surgery only.

(29) Verruca, as the word is used by Pliny is simply a wart. In his *Nat. Hist.*, 20, 42, 48, singing the praises of Ocimum, basil, he says: "Verrucas mixto atramento sutorio tollit"—mixed with shoemaker's blacking it takes away warts. *Nat. Hist.*, 22, 21, 29, makes the juice of the sunflower especially effective.

"Formica"—of course Formica ambulatoria, Herpes circinatus or H. Serpigo.

(30) Avicenna is Abu Ali el Hossein Ebn Abdallah Ebn Sina, the well-known Arabian physician and medical writer of the 10th and 11th centuries—he was as great a scholar as Fracastorius himself: he was born in Bokhara.

Discorides is Pedanius Dioscorides of Anazarba or Caeserea Augusta in Cilicia in the 1st century B.C., the greatest authority on ancient Materia Medica—his works are well known and have been often reprinted and translated.

I have examined the passage in Dioscorides mentioned in the Text—it is in Lib. I, cap. LXX., Thus. Speaking of Thus (*i.e.*, Frankincense), which grows in Arabia, he says of its medicinal properties: "It is effective for cooling and as an astringent: it dissipates cloudiness of the eyes, heals open ulcers and produces a cicatrix: it agglutinates bleeding ulcers and checks all bleeding, even if the flow is in the membranes of the brain: it softens the ulcers produced by Cacoethes and those of the fundament and other parts by lint anointed with it and milk: it cures formicant Verrucae (formicantes verrucae) in early stages, and Impetigo with vinegar and pitch. . . . ."

(31) Mirmecia (or rather Murmekia) in Greek, corresponding to Formica in Latin. "Murmex" is the Greek as "Formica" is the Latin for ant or emmet. Paulus Aeginetus, the celebrated Byzantine physician, surgeon and obstetrician of the 7th mentury, in his *De Rê Medicâ Libri Septem*, in the 4th Book, which treats of those affections which attack the external, and can be seen, and are not limited to one part of the body, at cap. 15, makes Murmekia (Latin, Formicationes) warts on the palms of the hands and soles of the feet, growing directly on the skin and without a neck, being in that way differentiated from Acrocordones.

(32) Analogous to the crass and sordid phlegm. Fracastorius has a whole work, *De Sympathiâ et Antipathiâ*, on Sympathy and Antipathy, from which and the present work we learn his views on Contagion as influenced by Sympathy and Antipathy. Briefly stated, such substances as have sympathy with each other are analogous: and contagion is from one analogous to another.

Sordid here means dirty, turbid, running to sediment: phlegm is, of course, one of the four elements.

He says at the very opening of his First Book:—"Contagiosae autem vocantur non quaecumque vicinum et contiguum humorem possunt inficere sed illae solum quae in alium consimilem inferre infectionem valent et dicta seminaria contagionis per se includunt."

"Those diseases, however, are not called contagious which can infect an adjoining and contiguous humor, but only those which can carry infection to a substance of the same kind and which have by their very nature what are called (seminaria) nurseries of contagion."

(33) Phlegmalentum—having phlegm in excess.

(34) Seminaria. "Seminarium" from "semen", seed, means a seed plot, houses, cold frames, nurseries, are all "seminaria".

"Seminaria" with Fracastorius are "hot-beds of infection". See Note 32 *ante*.

seeding ground, nursery, nursery-garden for raising plants from seed. Our hot-

(35) "Neruos"—Nervus still generally meant tendon and not nerve; it is often difficult to say which is meant, but I translate "nerve".

(36) "Calor naturalis" or "calidum innatum". It does not seem certain what Fracastorius meant by these words. Galen taught that the innate heat (emphuton thermon) was a substance composed of the semen and menses and was the origin of the being, becoming relatively less as the being increased in size; accordingly, the infant had more innate heat than the adult. In the body, there are, according to him, two kinds of animal heat, one which is perceptible to our senses, the "temperature" (in our modern sense of the word); and the other which goes back to the very beginning of its life and which is the cause of the former. Lycus, on the contrary, held that there was but one, namely, the former. E. Littré, in his admirable edition of the *Aphorisms of Hippocrates*, Paris, 1844, pp. 52, 59, discusses the theory of the Father of Medicine; and comes to the conclusion that Galen has not correctly interpreted the language of Hippocrates; but that Hippocrates, while he considered "innate heat" different from animal heat or temperature, looked upon it as the result, not the cause, of growth. I confess that to me the reasoning on this subject of Littré is not so convincing as usual, but I remember, Ne sutor ultra crepidam, and content myself with quoting the Aphorism, I, 14, "The growing have the most innate heat, therefore they need the most nourishment, otherwise the body fails; in the old the heat is small (oligon) and consequently they require little fuel; they would be extinguished by much. For the same reason, fevers are not so acute (oxees) in the old, because the body is cold."

(37) "Concocted"—"concequebat"—digested. Until but the other day "concoction" meant "digestion"—and the old physiologists recognized three kinds:

1. The digestion in the stomach and intestines, chylopoetic;

2. The digestion of the chyle into blood, haemopoetic; and

3. Secretion from the blood, *i.e.*, tears, perspiration, urine, etc. Sometimes the word is used of the process whereby a perissoma (that is, anything over and above what has been, or is to be utilized in the body, a useless residue) acquires a disposition which makes it fit to be secreted—and Hippocrates uses it as the second stage of disease whereby the morbific matter is rendered capable of being ejected from the system. Hippocrates, *Aphorisms*, I, 22, which, translated into Latin reads: "Concocta purgare et movere oportet, non crude . . . ." "Crude" means "indigested".

(38) "Adustio"—another extraordinary theory of mediaeval scientists lasting down to after Sir Kenelm Digby's time. As they noticed that water or other fluid by standing or being heated generally became thicker (pure water was never known in those days) and sedimentary, they believed that a "humor" or fluid, simply by the lapse of time, was affected as though it had been strongly heated by "adustion". Consequently it became more crass and earthy. As, too, sea water and other waters containing a salt were often heated and salt deposited, so a humor was likely to become salty by the simple lapse of time.

(39) "Prurium" is clearly a misprint for "plurium".

(40) "Obsumit" is also a misprint for "absumit". "Salt rheum" is about the only relic we have of "salt phlegm"—of course, "rheumatism" remains to remind us of the old theory.

(41) Porrigo, alopecia and achores sicci—all these are contagious, putrid and sordid.

In another place Fracastorius calls Alopecia, Siphilis—and in still another speaks of it as "Area".

"Area" is Alopecia Celsi, Alopecia areata, Tina decalvans, etc., said to be caused by trauma, nervous shock, ringworm, syphilis. Celsus describes it, Lib. VI. cap V, s. 4, as of two kinds, in both of which the outer skin dies, the hair thins and at length falls out—if the place is struck, the blood flows liquid and of ill odor. The progress is sometimes quick, sometimes slow—the worst form makes the skin hard (densam) and glabrous.

The two kinds of "Area" (as sometimes understood) are Alopecia and Ophiasis—the former is found in head and beard. It is generally found in the head of infants and *"perse saepe finitur"*—often stops of itself. Ophiasis, so called from its likeness to a serpent (Greek "ophis", a serpent) attacks all ages; it begins on the occiput with a breadth of not more than two fingers; it creeps to the ears, in some even to the forehead, until the two leads meet in front—it is seldom healed without treatment, "vix unquam sine curatione . . . finitur".

(42) "The island called Hispania" was Hispaniola, Hayti or San Domingo.

(43) "Iudaea", Judae, in both texts, both Stoer's and the Venetian, "India", India, in others.

The Value of Social Hygiene to a Community

By Dr. Gordon Bates

General Secretary, Canadian Social Hygiene Council

THE subject of my paper this evening is "The Value of Social Hygiene to a Community". I shall find it difficult to give you any conception of my subject unless I first of all say something about what the term, Social Hygiene, means, the origin of the Social Hygiene movement, and what it already has accomplished.

As to the time during which the term "Social Hygiene" has been used I do not know. Only recently has it been in common use. The first formal reference I have been able to find to it is in the book entitled, 'The Task of Social Hygiene', by Havelock Ellis, published in 1910.

According to the author, the Social Hygiene movement is the final stage of the tendency towards public health organization and social reform generally which gained so much momentum particularly during the final years of the last century.

The social reform movement had to do largely with the improvement of conditions under which life is lived, and aimed to mitigate many evils which menaced the comfort and happiness of the people. The public health movement began in the seventies of the last century, and owed its commencement to the discoveries of Louis Pasteur, the little French chemist, who was the first to definitely prove the bacterial origin of communicable disease. Social reforms have been the result of that love for one's fellow man which has ever been manifest when its development has not interfered too much with man's struggle for his own existence or with his racial or class antagonisms; and while social reform may have been characteristic of the last century, its development was by no means new or unique. Social reform of one sort or another has always been the obsession of some part of all communities ever since human beings have existed in organized society.

The organization of definite and rapidly effective methods for preventing disease and death, however, dates from very recent times, and is, of course, largely based upon the accumulation of knowledge as to disease transmission which Pasteur made possible.

The first effect of Pasteur's work and that of his scientific successors was the elaboration of many methods for the accurate diagnosis of disease, and later the working out of measures for both prevention and

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One of a course of lectures delivered to the social workers of Hamilton, Ontario, on Nov. 23, 1925.

cure. The science of bacteriology developed as a result. Later came the new science of immunology, having to do with the study of the means whereby the human body protects itself against disease. At the same time as specific methods of disease prevention developed, communities began to organize themselves to take advantage of them, and the function of the health officer and the health department became increasingly important.

Generally speaking, the attack on disease was of a frontal character based on scientific data, and manouvered by means of a scientific machine. Typhoid fever, for example, was found to be carried from person to person largely by contaminated water supplies. Hence carefully organized health departments undertook measures for the disposal of sewage and the purification of water supplies, and in the long run chlorination and filtration sounded the death knell of typhoid fever. Added to this measure later was anti-typhoid vaccination, which was to a large extent responsible for the absence of typhoid fever in the great war.

Similar stories could be told with reference to many other diseases. In some cases the most elaborate research has been necessary, and frequently the results have been far reaching. In the case of malaria and yellow fever, two diseases that have been veritable scourges in tropical countries, it was found that the causal organisms were carried from person to person by mosquitoes, and campaigns for the cleaning up of stagnant pools and for mosquito proof houses were necessary. A striking result of the early campaign against these diseases was the opening up of the Panama Canal. This had previously been impossible, because the workmen on the canal generally died of yellow fever or malaria. After Major Gorgas of the United States Army Medical Corps got to work these diseases were wiped out, and the Panama zone became one of the healthiest in America. This is an example of the possibilities in the direction of increasing the efficiency of social machinery by preventing disability and death. A socially hygienic state must have normal social machinery. Obviously the canals are an essential piece of social machinery just as much as are railroads or schools. The tremendous influence of the opening up of the Panama Canal on the development of world efficiency is evident.

The movement in the direction of cutting down infant mortality was an interesting development, based on exactly the same sort of scientific information as that upon which the prevention of typhoid or diphtheria or malaria is based; and the mere pasteurization of milk supplies has already saved the lives of millions of babies. But one could go on describing the results of the public health movement and devote a whole

evening to it. I only touch on it tonight because of its relationship to the subject under discussion.

Social reform had been largely an effort to increase human happiness. The public health movement saved life by eliminating conditions which were likely to cause death.

But there were many things of which neither movement took cognizance. One was the close inter-relation between disease and death and ineffective or unstable social organization. Here is obviously a vicious circle. Chronic disease or death, particularly of breadwinners, is one of the greatest causes of poverty. Poverty in a family results in descent in the social scale with all its attendant evils, lack of education, poor health, etc., because of the lack of the wherewithal to procure the social and other benefits enjoyed by the rich. On the other hand, health authorities at first scarcely realized the significance of the fact that it took more than mere bacteria to cause a high death rate, and that commonly the greatest factors are social. Perhaps the significance of the social factor was first realized in the case of Tuberculosis, where long hours of work, poor food, lack of sunshine and overcrowding exert an obvious influence in the spread of disease. As a matter of fact, the social factor is significant in the spread of all disease, and the final elimination of preventable disease from the world without a simultaneous attainment of ideal social conditions would be to all intents and purposes impossible. Social health, mental health, moral health and physical health can only be achieved together.

Neither did public health officials realize at first that in some degree they were dealing with a two-edged sword. The unquestioned improvement in environment which was evident towards the latter end of the last century, as the result of social reform and public health activities, while it resulted in a reduction of mortality in increasing the number of people living, also increased the number of the unfit and of the feeble-minded, who constantly increased the world's social problems. In other words, it was found that attacks on conditions under which life is lived, while resulting in more life, did little to influence the quality of life itself. Or to put it in another way, they did little to improve the quality of the race. The result of a realization and study of this fact was the development of the new and much misunderstood science of eugenics.

The problem of venereal disease, the most serious of all public health questions, was scarcely considered until the present century. Scientific discoveries, the Report of the British Royal Commission on Venereal Diseases and the great war combined to focus public opinion on the matter, with the result that amazing facts were brought to light. Syphilis was found to be the greatest single cause of death among the

infections, and in addition such a great cause of chronic disability, that it tended to clutter up institutions with its human wreckage. The two venereal diseases were responsible for an enormous percentage of abortions and miscarriages, sterility, blindness, heart disease, and insanity. Furthermore, the disease, Syphilis, in that it is carried from generation to generation, is of racial significance. Syphilis was stated by the British Royal Commission on Venereal Diseases to affect no less than 10% of all people living in cities; and Gonorrhoea, the other venereal disease, is even more prevalent. These diseases are present in all countries and in all climates. They are of such great importance that without dwelling unduly on the subject I propose to illustrate the results of syphilis by describing a family affected by this disease.

In a small town not fifty miles from Hamilton, in which a clinic has been established, a man applied to the City Relief Officer for coal and groceries for his family. Because he complained that he was unable to work on account of rheumatism, he was referred to the local hospital for examination. A Wasserman reaction established the fact that he had syphilis.

On examination it was found that his family consisted of a wife and seven children. The details were turned over to the social service nurse attached to the clinic, and one by one she brought in the various members of the family for examination. Their condition was as follows:

Wife—was syphilitic.
1st child—syphilitic—partially blind and deaf.
2nd child— „ —deaf and dumb.
3rd child— „ —deaf and dumb.
4th child— „ —long bone syphilitic infection and a cripple.
5th child— „ —an idiot.
6th child— „ —mentally defective.
7th child— „ —18 months, no obvious defect.

This family lived and grew in this small Ontario city for twenty years. No one discovered the existence of syphilis. Doubtless it was spread to other families. The state is caring for various members of this family in institutions now. It is true that through the machinery we have, the family is under treatment for existing syphilis; but the point is that these defective people should not have been born as defectives.

This case illustrates many of the points which I have tried to make in the earlier part of this paper, particularly the relationship between disease and social conditions. I ask you to remember in passing that at the present moment in Canada there are, as a result of the Social Hygiene movement, seventy-two clinics treating this type of disease; and

that in the last five years about 125,000 people have been reported as brought under treatment, in spite of the fact that reporting by physicians is notoriously ineffective.

This particular disease problem immediately brings up new questions for discussion. Here is a type of disease in which obviously human conduct is a matter to be considered. No one ever thought before that in discussing the prevention of disease, moral and ethical considerations should be thought to be of primary importance. Obviously they are, and education of a new type is necessary.

Again, more than ever we are brought face to face with the necessity for better social organization and safeguards of a new character.

Factors which are responsible for venereal diseases are the same factors essentially which are responsible for divorce. Late marriage and improper marriages are partly responsible. I take it that you will agree with me that when two normal, healthy young people, having reached the age of discretion, fall in love and marry, with due regard for and in expectation of bringing children into the world, they are acting properly and normally—also that many conditions may arise in the world as it is now constituted which will interfere with this ideal—the average normal destiny of human beings. Young people, because of the lack of proper preparation for marriage on the part of home, church or school, often grow up in ignorance and show little respect for love and marriage. Again, marriage is often delayed because of economic or other reasons, and delayed marriage is too frequently a serious matter. I need not detail the results. Often they are disastrous.

How serious they are in increasing the divorce rate is particularly obvious in some great American cities, in which the daily newspapers run a column for births, marriages, deaths and divorces, with a generous percentage of the space devoted to the divorce section daily.

Everyone acknowledges that divorce is a bad thing. Society has attempted to prevent divorce by merely forbidding it. The proper method is to prevent the marriage of people who are unfitted for it, and to educate our young people so that they will all be physically, mentally and morally fitted for marriage. Unfortunately we have accomplished little in this direction as yet.

Perhaps the most serious result of divorce is the broken home resulting in the visiting of the sins of fathers and mothers on the unfortunate children, who grow up to constitute the social problems of future generations. In Ontario the work of our Mothers' Allowance Board tends to focus public attention on this method of preventing the evil results of the broken home, whether it is caused by divorce, disease, desertion or death. Approximately $2,000,000 is the cost of this

provincial service—money well spent—only a slight index, however, of the cost of these social tragedies. Money spent in this manner saves future costs in the jails and the reformatories. But if one considers the matter carefully one sees that insofar as desertion, divorce, disease and death are unnecessary, this item of provincial expenditure should be made also unnecessary.

I must not close this paper without some reference to the cost and the preventability of disease and death generally. Winslow of Yale estimates that 29% of all deaths are preventable. Other authorities give the opinion that from 45% to 60% of all disease is preventable. An analysis of Ontario statistics recently made would appear to prove that 34% of all deaths in Ontario are from preventable causes.

It is estimated that in the Dominion of Canada 180,000 individuals are suffering from disabling illness every day, and that as a result 54,000 adult males and 16,200 adult females are constantly withdrawn from industry because of illness, resulting in a loss to industry of 21,000,000 working days.

We have nearly $200,000,000 tied up in institutions for the care of the ill (asylums, sanitaria and hospitals), the upkeep of which costs $50,000,000 per year, to say nothing of private institutions, philanthropic homes, refuges, etc. Beds in an institution are constantly filled with people who have no business to be there—suffering from preventable illness, towards the prevention of which we should have concentrated our energies. I cannot go into details at this time, but I would suggest that you investigate the statistics covering incidence and death rates from such diseases as Diphtheria, Scarlet Fever, Typhoid Fever, Tuberculosis and Diabetes and diseases of infants.

The following figures are striking. They apply only to the Registration Area, comprising about 70% of the population of the Dominion.

Diphtheria exacts yearly a toll of approximately 1,200 lives, representing the mortality from approximately 13,500 cases.

Similarly Scarlet Fever claims 325 lives from 14,700 cases.

Typhoid mortality still removes 400 to 500 individuals, and the number of cases still remains in the neighbourhood of 5,000 per year.

Tuberculosis continues to take each year 5,000 lives, the majority in the prime of life. The accepted ratio between incidence and deaths suggests that there are in the Registration Area between 100,000 and 150,000 individuals who have this disease.

Diabetes, rendered so controllable through the brilliance of Canadian scientists, still takes yearly about 700 lives.

Infant Mortality—There are yearly 15,000 deaths of infants under one year; approximately three-quarters occur before the child is one week old.

Cancer, with little change from year to year, removes by death yearly, roughly, 5,000 individuals.

Syphilis is said to constitute the greatest single cause of mortality and disability; but as death results late in this disease, it is difficult to give exact figures as to yearly mortality. The mortality is probably between 7,000 and 15,000 deaths per year, this arising from such late results of syphilis as insanity, heart disease, locomotor ataxia, aortic aneurysm, etc. There is, however, a well-founded impression that owing to direct public health measures, the syphilis rate is steadily falling.

Here may I point out that the whole machinery of this and other countries has in the past been so concentrated on organizing to cure rather than to prevent, that we have scarcely come to the point where we are able to face the situation and deal with the matter adequately.

For example, many diseases could be checked if a diagnosis could be made in an incipient stage. Routine and regular physical examination of the population has not been undertaken in the past, in spite of the fact that it is the only method by which it can be possible to prevent many serious disabilities, which as the result of neglect finally remove their victims permanently from participation in the affairs of ordinary life, and unnecessarily fill the beds of institutions for the halt and the maimed and the blind. The Well Baby Clinic is a recent discovery which has proved its value. The clinic for well adults is still to come.

This brings us to the discussion of the child, and one discovers that mortality in new born children is frequently the result of disease in the mother. This is a subject which one cannot discuss here fully because of lack of time. There is no doubt whatever that organized care of pregnant mothers, I mean both careful physical examination and instruction as to the care of both mother and children, would both do much to cut down infant mortality and make better babies. A well organized scheme for pre-natal examination and instruction should be part of any normal community's social hygiene programme.

So far you will gather this address has dealt with the need for Social Hygiene, and you will see that I am interpreting Social Hygiene as standing for a normal healthy community, and the social hygiene movement as merely an organized effort on the part of society to achieve its own salvation. The subject is obviously worthy of a book rather than a mere paper.

The need for social hygiene is obvious. One wonders why it has taken so long for us to realize the need and why the movement has

commenced now. The answer is that in former ages society could not undertake its own house cleaning because of society's ignorance. The advance of scientific knowledge, particularly, perhaps, in the fields of disease prevention and biology, has meant an accumulation of information which it would seem has made the development of such a movement inevitable.

The peculiar, and to some extent natural, human trait of specialization has had something to do with holding the movement back. One can reasonably, I think, bring forward the argument that although specialization has its value in social advance, it also has serious drawbacks, the most serious of which is the habit which most of us develop of living our lives and developing our institutions in more or less watertight departments. The specialist doctor, lawyer, merchant, social worker or bridge builder tends to live to himself alone and to feel that he is the be-all and end-all of his own field.

Mistakes in social organization will not be prevented by social workers alone, nor will disease be prevented by doctors alone, nor will our laws be ideal because of our lawyers alone. The great need is general interest on the part of everyone in each community in the promotion of a movement in which each individual and each unit will bring help and advice to every other individual and unit.

Think of the picture of things as they are which presents itself. Disease of so widespread a character that its cost is greater than that of war itself. $270,000,000 per year is estimated to be the yearly cost of disease in Canada. Institutions which never should have been built are filled with ailing humans who never should have become ill. Resultant poverty which could easily be prevented, divorce and crime which come about because we allow parents to die, and because we fail to educate our children in the great fundamentals which make for happiness and efficiency in life. So far we have been content to go on paying, and at the same time to allow our doctors to waste their time treating disease which should not exist, our judges and lawyers to punish people for crimes for which we are largely responsible, and our social workers to feel that they have reached the end of all things when they have formed financial federations to stabilize the support of charities, towards whose elimination we should be bending our energies. It is all too expensive whether one speaks in terms of waste effort, of dollars or of human happiness. The situation is reflected even in our legislatures and parliaments, where the serious discussion of the things which make nations great is unusual. We have just passed through an election campaign in which platform discussion was confined (for party reasons, I imagine) largely to the matter of Tariff. We heard little discussion on the part

of candidates of the matter of the development of a real Health programme for Canada, fundamental though such an issue is.

May I say in passing that I have never been able to see much value in a system which results in the neglect of the greatest issues in which mankind can take an interest to the end that one party or another may retain or regain office. The parliament of man of Locksley Hall seems to be still in the far distant future. When will the time come when we shall elect candidates to represent people and not parties?

But conditions in Parliaments are only an echo of conditions among the people at large, and the real difficulty is the lack of interest and information among people generally. The social hygiene movement through its Social Hygiene Councils provides a means whereby communities may organize themselves.

The ideal Social Hygiene Council should be a general Council representative of all the interests of a community, not only of the groups which are ordinarily called upon. A good programme, good committees to deal with the various problems which have to be tackled, some information and not a little enthusiasm, and much may be accomplished.

The job is not to organize charities, or to co-ordinate the work of existing institutions. It is to preach the doctrine of health in its broadest meaning, to insist upon the necessity for each community obtaining health by organizing itself. And I believe that such work can only be done by a separate organization which specializes in bringing specialists and specialists' organizations together.

Were there a sufficient number of such organizations (I mean Social Hygiene Councils) in Canada, and were they all active, the effect would be felt not only locally but generally. We need the interest of our legislators. We need to bring to bear the forces of all our great national organizations, our banks, our insurance companies, our medical profession, our educators, our lawyers. A co-ordination of activities is possibly only insofar as local interest and organization proceeds.

One other matter I must mention. I have tried to outline for you something of the necessity for and the possibilities of a Social Hygiene movement. I may be met by the criticism that the ideals I have suggested are unpractical, and the programme necessarily of so vast and so varied a character that one will scarcely know where to begin; and were the aims of the Social Hygiene movement over a particular period of time not confined within certain limits, such a criticism would be valid.

With this point in mind, about a year ago representatives of the British, American and Canadian Social Hygiene organizations met and

agreed to, as far as possible, confine the activities of their respective organizations within the limits of a certain programme for the present. This programme will be altered from time to time.

At the Annual Meeting of the Canadian Council the following formal Aims and Objects will probably be adopted as covering the programme to be carried out in Canada during the next few years, although certain additions or subtractions may be made.

AIMS AND OBJECTS

It is recognized that Social Hygiene in its widest sense includes all things that have to do with the welfare of human beings living in societies; but for the purpose of this organization it is proposed to devote attention to the following points by disseminating the knowledge acquired in the medical, psychological, sociological, anthropological and other fields of science in order to form an instructed public opinion and to secure action when possible.

1. To preserve and strengthen the family as the basic social unit.

2. To promote educative and social measures directed toward the adaptation of the racial instinct to the conditions of civilized society.

3. To emphasize the responsibility of the community and the individual for preserving or improving the quality of future generations by educative and social measures.

4. To further social customs which promote a high single standard of sex conduct in men and women.

5. To promote the prevention and treatment of venereal diseases by appropriate educative, medical and social measures.

6. To repress commercialized vice and conditions conducing to promiscuity.

7. To co-operate with the various organizations interested in the above subjects with a view to co-ordinating efforts to secure these ends.

My present task then is finished. Rather than the title, "The Value of Social Hygiene to a Community", I might have chosen the title, "How to Achieve Utopia", and suggested to you that the achievement of Utopia is now an ideal quite within the reach of a community of thinkers and workers who are willing to think and work together.

Radio Talk

New Year's Message Prepared for the Canadian Social Hygiene Council and delivered at CKCL Broadcasting Studio, Toronto

HOW CAN WE PROLONG THE LIFE LINE?

By Dr. C. J. O. Hastings,
Medical Officer of Health of Toronto.

Begin the year right by entering into a Covenant with your bodies that you will have a complete physical examination, and obtain a certificate from your family physician explaining the condition of every organ in your body, whether or not they are functioning efficiently; that you will religiously carry out all your physician's instructions as regards personal hygiene, a properly balanced diet, a food-exercise balance; that you will live only in proper air conditions, and in fact observe carefully all the laws of hygiene, and will do only those things that make for health and longer and happier lives.

It seems incredible that a comparatively small group of men in any community have almost to compel the masses efficiently to safeguard themselves against premature old age and death.

During the past decade we have frequently read the statement in the public press, and even in medical journals, that in the last half century fifteen years have been added on to man's life. This is incorrect. It misrepresents the facts. The correct statement is that fifteen years have been added on to the expectancy of life, and it applies only up to fifty years of age.

This additional fifteen years to the expectancy of life is due, for the most part, to the reduction in infant mortality, and also the reduction from the acute communicable diseases. For instance, the infant mortality in Toronto is less than half of what it was fifteen years ago. That is, every infant born in Toronto for the past two or three years has had double the chance of living to be a year old than those had that were born fifteen years ago.

Typhoid Fever has been almost exterminated. Deaths from Tuberculosis in Toronto are less than half what they were even ten years ago. In fact, the general death rate in Toronto has been so reduced in the past fifteen years that we are now having over 1,700 fewer people dying in our City annually than would be dying if the death rate of fifteen years ago still obtained.

So that the increased expectancy of man's life has been, for the most part, due to the saving in the earlier years of life.

But, unfortunately, there has been no decrease in the death rate from the so-called wasting or degenerate diseases of middle life, but rather an increase. In other words, the man at fifty has fewer chances of reaching seventy than he had fifty years ago. And yet these diseases peculiar to middle life are controllable.

You will naturally ask what are these diseases, and what are their causes. These wasting diseases of middle life are Chronic Bright's Disease of the Kidneys, Chronic Heart Disease, Premature Hardening of the Arteries, and Cancer. The first three may be due to any one or more of the following: First—They may be traced back to the toxic effects of the acute communicable diseases of childhood or early adolescence. This is more particularly true as regards Bright's Disease and Heart Disease.

Second—Focal infections. That is, absorption of toxins, or the transmission of germs from the intestinal canal; diseased tonsils; diseased condition of the teeth and gums, especially pyorrhoea and abscess at the root of the teeth.

Then owing to our mode of living, we add insult to injury by indiscretion in our diet—over-eating and insufficient exercise. Excess of proteins after middle life, more especially meats of all kinds, are a menace to the health of those engaged in brain work and sedentary occupations. Protein after middle life is intended only for muscular workers.

What, then, can you do to help in prolonging life and lessening the dangers of these diseases of middle life? The efficient solution of this problem is largely in your own hands. If you have diseased tonsils, have them removed without delay. If you have diseased teeth, have the conditions corrected or the teeth removed. See to it that the waste matter from the food you take is not retained in your alimentary canal more than twelve hours.

Don't worry. Worry has a blanket influence. It interferes with the functioning of every organ in the body to a greater or less degree. There is probably no other single cause so potent in bringing about premature old age and making life unbearable, as worry. You may claim an inalienable right to grouch, but remember that sour moods are just as toxic as sour stomachs. Worry is probably the most fashionable form of suicide.

Then there is the role played by heredity. Just to what extent we inherit pre-disposition to some of these diseases is not as yet known.

Furthermore, there is a role played by the endocrine gland, the

internal secretions. Just what the future holds in this connection it is difficult to say.

As regards Cancer, the appalling sacrifice of life every year from this dread disease could be reduced at least fifty per cent. if the cases were diagnosed early enough and promptly treated. New aids in diagnosis make it possible to diagnose all these diseases in a much earlier stage than could have been done even ten years ago.

Take no chances. Keep yourself informed as regards the efficient working of the human machine. How long do you suppose your business would live if you gave it as little consideration as you give your body? How frequently do you have your limousine overhauled? How frequently do you have the engines and boilers that turn the wheels of industry inspected and overhauled? What will your business, your limousine, or your industry mean to you when the human machine is prematurely and irreparably broken down?

Unfortunately, the human race started off with the wrong objective centuries ago. It is difficult to understand why we should all have accepted, and why our forefathers should have accepted, the Psalmist's prediction that man's years should be three score years and ten, inasmuch as Moses tells us that man's days shall be an hundred and twenty years, and the Prophet Isaiah, while visualizing the New Jerusalem, said: "There shall be no longer thence an infant of days, nor an old man that has not filled his days, but the child shall die an hundred years old."

Over a hundred years ago Professor Flouren, one of the most distinguished French physicians and scientists in his day, revealed the law peculiar to all mammals, that they should live for five times the length of their period of full physical development. Man is not fully developed until between twenty and twenty-five years of age. Therefore, according to Flouren's law, man should live to be from a hundred to a hundred and twenty-five years of age.

Metchnikoff, the great Russian Scientist, who succeeded Louis Pasteur as Director of the Pasteur Institute in Paris, has maintained for years that man should live to be an hundred years old. Many of his colleagues quite concur in this opinion.

Metchnikoff has repeatedly drawn attention to the lamentable economic loss through the sacrifice of human lives at a period when they are of most value to their families and to the Nation. This sacrifice at this period of life is a lamentable waste of mature judgment. It is from this period of life that our Judges, our Arbitrators, our Diplomats, our Ambassadors, etc., are chosen.

But in order to do so, we must change our methods of living, and it is quite within the range of possibility that within an incredibly short

time, and with the proper application of the knowledge we now possess, from ten to fifteen years could be added on to the seventy years limit of centuries ago.

Eat intelligently, drink intelligently, and be merry, and to-morrow you won't die. Give to your bodies at least as much consideration as you give to your business or your industry. What would it profit a man if he were to gain the whole world and lose his own health, or what would a man give in exchange for his health?

Begin the year right.

The Provincial Board of Health of Ontario

Communicable Diseases reported for the Province for the Weeks ending December 5th, 12th, 19th, 26th, 1925

COMPARATIVE TABLE

Diseases	1925 Cases	1925 Deaths	1924 Cases	1924 Deaths
Cerebro Spinal Meningitis	2	—	5	4
Chancroid	—	—	—	—
Chicken Pox	597	—	852	—
Diphtheria	266	25	364	27
Encephalitis	5	1	10	3
Gonorrhoea	148	—	119	—
German Measles	19	—	11	—
Influenza	—	31	—	13
Measles	489	—	1363	2
Mumps	295	—	582	—
Pneumonia	—	197	—	115
Poliomyelitis	—	—	6	1
Scarlet Fever	558	13	618	9
Septic Sore Throat	10	—	5	—
Small Pox	32	1	33	—
Syphilis	74	—	95	—
Tuberculosis	166	62	123	64
Typhoid	53	5	85	12
Whooping Cough	113	7	279	3

Cases of Small Pox reported for the Province for the month of December, 1925:

		Cases	
Hastings County	Trenton	4	
Peterboro County	Asphodel	5	
	Dummer	1	
Renfrew County	Eganville	3	
	Alice and Fraser	1	
	Wilberforce	1	
	Griffith and M.	2	
	McNab	1	
Carlton	Ottawa	2	
Prescott and Russell	Rockland	5	
R R District (Unorganized)	Atikokan	2	1 death
Grey County	Glenelg	1	
Waterloo	Kitchener	2	
Brant County	Brantford	1	
York	Toronto	1	
		32	1

JOHN W. S. MCCULLOUGH.

Sanitary Inspectors' Association of Canada

PUBLIC HEALTH NURSING IN MANITOBA

By Miss E. Russell, R.N., A. R. San. I.,
Superintendent of Provincial Public Health Nurses, Manitoba

(Continued from Dec. 1925 issue)

In January, the Manitoba Red Cross Society appointed a full-time physician to meet the grave problem, namely, lack of medical service, that had existed in connection with the public service nursing stations. The doctor visited each nursing station monthly, held clinics and visited the sick in their homes.

A new feature of Health Educational work was launched in September of this year, when team demonstrations in "Home Nursing" and "Care of the Baby" were organized in connection with the Boys' and Girls' Clubs. The Public Health Nurses selected three outstanding members from their Little Mothers' League Teams and gave them an additional course of intensive training. These teams were judged by representatives of the department controlling Boys' and Girls' Club work, and the winning team of each of the six provincial districts had the honour of coming to Winnipeg with their Public Health Nurse leader, to demonstrate in the final competition held at the Board of Trade Building, Winnipeg. The winning team, also the girl showing the best individual work, was awarded a gold medal by the Junior Red Cross Society.

The poor wheat crop of 1921 and 1922, and the consequent reduced financial status of the Municipalities, resulted in some of the districts dispensing with the services of the Public Health Nurse. The Nursing staff in December, 1922, numbered 42.

The increased financial depression of some of the Municipalities making it impossible for them to pay for the Public Health Nurse's services, resulted in a further decreasing of the staff to 32. However, the increased interest and co-operation in the work of both Municipal officials and ratepayers in many districts was most encouraging to the Board of Health.

In April of this year the Minister governing the Health Department decided on a fixed allowance for the up-keep of cars used by some of the Public Health Nurses in rural districts.

The Dental Clinics for school children, at one small town in the province, demonstrates the value of continuous trained and intelligent

Public Health work. In 1920, and prior to the establishment of the Dental Clinic, the dental defects of their school children were 70%. At the end of 1923, the dental defects were reduced to .6%.

In April of this year, on the advice of the Board of Health, the Manitoba Red Cross Society took over complete control of the Red Cross Nursing Stations, where public service nurses of the staff were stationed. This branch of nursing service, had, since its inception in 1920, been under the direction and supervision of the Board of Health, the money for maintenance of the stations being provided by the Red Cross Society.

In May, the Department of Agriculture, in connection with their Better Farming Train, placed a passenger car (known as the Better Health Car) at the disposal of the Public Health Nurses' Department, for the purpose of holding health lectures and conferences for mothers and children at railway points in isolated districts on the Canadian National Railway. Ninety-five points were visited in two months. Fifty-two lectures were given to mothers, with a total attendance of 2,033. Sixty-nine lectures to children, with a total attendance of 6,123.

During the year a Reference Library was compiled of health literature, for the use of the nursing staff.

The Editor of the WESTERN SCHOOL JOURNAL instituted a Health Education department in the Journal, which has been edited ever since by the Public Health Nurses' Department. This has been a valuable means in increasing the interest of teachers in health instruction and school sanitation.

A revision of the Manitoba Baby Book was made, and a Prenatal Supplement was made a separate leaflet, owing to the demand for literature in infant care by girls' organizations.

In spite of the set-back to public health endeavour, resolutions in favour of the nursing service were passed at the Annual Convention of Trustees' Association, unanimously in favour of the work of the public health nurses.

The United Farm Women's resolution was as follows:—

"WHEREAS preservation of health is the first essential to the welfare of Canada from an economic, as well as from a social standpoint;

AND WHEREAS it is generally recognized that prevention of disease is of lower cost to the human race than care;

AND WHEREAS the Public Health Nurses, through their widespread work, are teaching prevention, and at the same time discovering defects that are readily cured in their earlier stages at a comparatively small cost;

THEREFORE be it resolved that we, the United Farm Women of Manitoba, in Convention assembled, again place ourselves on record as giving our support to the Public Health Nursing system, and the maintenance of the Public Health Nurses during the present economic crisis."

In 1924, the Annual Extension Courses of Lectures for public health nurses, held by the Manitoba University, was enlarged for the benefit of all graduate nurses.

To encourage the teachers in the Health Crusade programme, and to urge the co-relation of health ideas in the regular school subjects, a Health Poster Competition for Manitoba school children was conducted by the Public Health Nurses' Department.

Three hundred and twenty-six posters were received, and displayed in the rotunda of the Royal Alexander Hotel, in connection with the Teachers' Convention during Easter week. They made a most effective exhibit of school work, and won numerous expressions of praise from visitors interested in health education. The posters were judged by the Superintendent of Normal Schools, a prominent teacher, and an artist.

Special surveys were conducted during the year for mental defects in Portage la Prairie, and for thyroid conditions in Dauphin, Stonewall, and Bird's Hill. In Oakland Municipality a survey of the school children and the condition of the schools was undertaken by the Health Officer and two public health nurses, under the auspices of the Canadian National Tuberculosis Association. The survey was made under the most trying conditions, and at break-neck speed, but demonstrated clearly the need for a health programme, which has not yet been planned.

The Social Service work of the nurses increased to a large extent, owing to the problems created by poverty and its trail of ills, and assistance was given in two districts where no nurse was sustained, in curtailing epidemics of smallpox and scarlet fever.

The nursing service, perhaps, betrays its most human side in the distribution of relief, which has of necessity had to receive attention. If you see a nurse at any time with a bundle under her arm, of any size, it is certain to contain clothing taken from some friend or relative. Co-operation is maintained with relief organizatons, and the Attendance Branch of the Board of Education to prevent overlapping in sending out parcels from the main office.

The work of organization in rural districts was far from easy. The public health nurse was in many instances not the welcome visitor that she is to-day. To old-timers the service was a fad, and it was only by becoming the personal friend of each, and eliminating the official manner of approach, that a change of ideas has been brought about. Looking back over those first years of health education, one is struck by the

changed attitude towards health matters, and the amount of health knowledge shown by the people.

This awakening of the public conscience in public health work is evidenced by the demand for speakers on health subjects at public meetings, by the resolutions passed, the calls for Home Nursing Courses, the thousands of requests for health literature (of which the Manitoba Baby Book is the most popular), and the keen interest in every phase of the work of the nurses.

The Home Nursing and First Aid Courses are greatly appreciated by the classes, which in many cases now include the men of the community, for instruction in first aid. Health instruction to the Canadian Girls in Training and Tuxis Groups has also become a routine measure as circumstances permit.

As to the difficulties encountered in the service, they are many, for in almost every point of attack there has been some handicap. Financial depression increases social service work, and lack of adequate morbidity and mortality statistics prevents active steps in urging the necessity for better maternal and infant protection.

Lack of diagnostic facility for treatment for the poor, hinders work in correction and control of disease. In this respect, efforts to place tuberculosis nursing on a sound basis had so far met with but little success. A programme has now been outlined, and an experienced nurse assigned to start preventive work along this line.

The problem of inadequate nursing service makes the need for public service nurses very acute. The rural areas which public health nurses have to cover do not permit them to follow up mothers and children regularly by home visiting. Smaller areas, and independent transportation would result in more satisfactory work, but municipal and provincial finances at present do not permit added expenditure.

The work of the Child Welfare Stations presents other problems. The greatest of these is the lack of pediatricians. Physicians have given freely of their time and service to the work in these stations, and in addition have aided much in the treatment of the sick poor.

Another is the confusion that exists in the minds of the public between the work of health conferences and that of the clinics, and it is exceedingly difficult sometimes to know just where to draw the line between the two in rural districts. At present the Child Welfare Stations are operated as an educational measure. Remedial work is carried on by means of special clinics, organized for the treatment of children by the nurses, under the auspices of a local welfare organization.

The maintenance of high standards in nursing for a rural service has been by no means an easy task, but was a most important consideration; for much of the success of the service has depended upon the personality and ability of the nurses in the field.

Monthly Jottings of Sanitary Inspectors' Association

WHAT SANITARY INSPECTORS ARE DOING IN OTHER COUNTRIES

NEW ZEALAND

THE REVIEW, which is the official organ of the New Zealand Sanitary Inspectors' Association, is a bright and interesting Journal of about twenty-five pages, and is a credit to the Association. In the November issue, an interesting suggestion is made, as follows:

"We suggest that the time has come when opportunity should be taken to review, with the responsible officers of the Department of Health, the course of study required to both qualify for and keep abreast of the duties imposed on the Sanitary Inspector; and that the Central Department, the Sanitary Institute, and our Association, should co-operate in promoting a scheme of training for prospective Sanitary Inspectors—a course of post-graduate instruction for those in active service who may desire to avail themselves of such—and if desirable, seeking a university diploma in hygiene and sanitary engineering for those who wish to qualify for the higher branches of work connected with public health, or act as instructors."

A very laudable scheme, and one which Canada might also promote.

AUSTRALIA

The Sydney City Council has decided to send its Chief Health Inspector on a world tour, to study the different methods of scientific sanitation in vogue in other countries. The itinerary includes America, Great Britain, and the continent. An allowance of £1,500 has been made to Mr. Vagwell, to cover the expenses of the trip. Mr. Vagwell will represent the City of Sydney at the Jubilee Conference of the Royal Sanitary Institute, to be held in London next year.

Owing to lack of uniformity in the examination system for the qualification of Health Inspectors throughout the Commonwealth, the Australian Sanitary Inspectors' Association has decided to create an institute, through the agency of which provision is to be made for a Commonwealth Board of Studies and Examining Boards in the individual States. The Board of Studies is to be entrusted with the drafting of a syllabus of subjects and study, and the framing of the regulations govern-

ing instructions and examination. The Board of Examiners will arrange for and conduct periodical examinations for certification, and recommend the issue of certificates to successful candidates. It is proposed to ensure a higher standard than now obtains generally, that the course of study shall extend over a period of three years, and be so designed as to embrace every branch of hygiene and sanitation at present covered by the different examining authorities. It would appear that this step taken by the Australian Association will go far towards securing the aim of the promoters, "to promote a more permanent status for the Inspectorate of the Commonwealth".

Canada must not lag behind in furthering similar laudable objects.

SOUTH AFRICA

The South African Sanitary Inspectors' Association and the South African Health Officials' Association have amalgamated, and will be known in future under the latter title, with Cape and Transvaal centres. The Association has a total membership of 289, including 180 Sanitary Inspectors, 19 Chief Sanitary Inspectors, 20 Medical Officers of Health, 22 Health Visitors, 15 Meat Inspectors, and 5 Factory Inspectors.

ENGLAND

We have to hand the report of the recent convention of the Sanitary Inspectors' Association held at Liverpool, at which some 600 members were present. The British Sanitary Inspectors' Association was founded 42 years ago, and has now nearly 2,000 members. There are subsidiary associations which the members can join, one for providing funeral benefits, and another for providing legal help to Sanitary Inspectors when attacked in their official capacity. The address of the President of the Association, Sir William Collins, K.C.V.O., M.D., F.R.C.S., was most brilliant, and we wish that we had space to reprint it.

Our own Association has been in existence for over 12 years, and we have been remiss in not learning before now something of the methods used by sister Associations within the Empire. From now on we shall endeavour to keep in touch with them.

Your Executive Council is meeting regularly every month and dealing with routine business, as well as trying to think out a policy for development.

Notes on Current Literature

From the Health Information Service, Canadian Red Cross Society, 410 Sherbourne St., Toronto 5, readers of the "Public Health Journal" may borrow any of the articles listed. Please mention the date of issue of this Journal and the title of the article desired.

The Health of School Children

An address by Miss R. M. Simpson, Director of School Hygiene, Saskatchewan, at the 1925 Conference of the Canadian Council on Child Welfare. "The Canadian Nurse", December 1925, page 621.

School Health Examinations

An address by Dr. C. E. Buck of the Detroit Department of Health, read before the American Public Health Association at the 54th Annual Meeting. "American Journal of Public Health", November, 1925, page 972.

Child Welfare in Canada

"Social Welfare" for November, 1925, contains a group of four articles summarizing progress in Child Welfare in Canada during the past five years.

Health Habits of Rural School Children

By Gertrude Bilhuber, Associate Professor of Physical Education for Women, Purdue University, Lafayette, Ind. "The Nation's Health", November 15th, 1925, page 748.

Health Education

The class-room teacher's part in health education. By Maud A. Brown, Director of Health Education, Fargo Child Health Demonstration, Fargo, North Dakota. "Child Health Bulletin", November, 1925.

Books Added to the Library

A Textbook of Physiology. By W. D. Zoehout, Ph.D., Professor of Physiology in the Chicago College of Dental Surgery and in the Chicago Normal School of Physical Education. Cloth, $4.50. Pp. 616. St. Louis: The C. V. Mosby Company, 1925.

This book is intended to fill the gap between the larger text-books in physiology and those that offer a briefer course. It is clearly written and well illustrated.

A Health Survey of 86 Cities. By the Research Division of the American Child Health Association. Cloth, $3.00. Pp. 614.

The Little Child In Our Great Cities. By W. Bertram Ireland. Published by the American Child Health Association, 370 Seventh Avenue, New York, 1925. Pp. 201.

This book is an account of the "status of organized effort for the health of the pre-school child" in 24 large cities of the United States. A study begun several years ago by the National Child Health Council and completed by the research division of the American Child Health Association.

Public Health in England. The Annual Report of the Chief Medical Officer of the British Ministry of Health for 1924, London. H.M. Stationery Office, 1925. 3*s.* 6*d.*

Studies from the Connaught Laboratories. The Connaught Laboratories of the University of Toronto has issued the second volume of studies made from 1922-1925.

Ontario Public School Health Book. By Donald T. Fraser. Cloth, 20 cents. Pp. 202. Toronto: Copp Clark Company Limited, 1925.

This book is authorized by the Minister of Education for Ontario, and aims to present to public school pupils the subject of hygiene in an interesting manner, free from technical terms, and to arouse a desire for proper living by the development of health habits.

The International Year Book of Child Care and Protection. By Edward Fuller, Editor of "The World's Children", Cloth, $2.50. Pp. 565. New York: Longmans, Green & Co., 1925.

This book is a record of state and voluntary effort for the welfare of the child, including information on marriage, divorce and illegitimacy, education, the care of the destitute child, treatment of juvenile delinquents, and conditions of juvenile employment throughout the world.

Home Hygiene and Care of the Sick. By Jane A. Delano, R.N. Paper. Pp. 347. Philadelphia: P. Blakiston's Sons & Co.

Copies of this publication of the American Red Cross may be obtained for use in Canada from the Canadian Red Cross Society. Price 85 cents.

The Communicable Diseases. By Allan J. McLaughlin, M.D., Surgeon, United States Public Health Service. Cloth, $2.50. Pp. 269. New York: Harper & Bros.

Child Hygiene. By S. Josephine Baker, M.D., Dr. P.H., Consulting Director, U.S. Children's Bureau. Cloth, $5.50. Pp. 534. New York: Harper & Bros., 1925.

News Notes

The Department of Health of New Brunswick reports that the Travelling Diagnostic Service established during the last year has had as its object the stimulation of interest in anti-tuberculosis work, and the furthering of early diagnosis and treatment by institutional treatment of suitable cases and supervision of home treatment cases. Under the plan adopted clinics have been established in larger centres, and personal calls have been made on medical men in the smaller centres. No patients have been admitted to clinics except those referred by physicians.

Dr. G. J. Wherrett, Travelling Diagnostician in charge of this particular work, reports that he has received the fullest co-operation of medical men in the districts in which he has worked, that 600 patients have been examined in consultation, and that a survey has been made of 5 per cent. of the school children in the Public Schools of Rexton and Moncton. 16 public addresses on Tuberculosis have been given.

Dr. B. Franklin Royer, formerly head of the Massachusetts-Halifax Health Commission, is now acting as Corresponding Secretary of the Conference of State and Provincial Health Authorities of North America. His services have been loaned to the official committee on the conservation of vision. The president of this Conference is Dr. M. M. Seymour of Saskatchewan.

The following resolution was adopted by the National Committee for the Prevention of Blindness meeting in New York City on December 3rd, 1925.

Whereas, recent studies of health conditions among our 300,000 American Indian wards disclose an appalling prevalence of trachoma with its inevitable damage of vision and ultimate sequelae of blindness, and

Whereas, reports recently made public by governmental agencies charged with guardianship of these 300,000 Indian wards, confirmed also by many sincere friends of the American Indians, show that provisions are now made for a totally inadequate staff of highly trained persons to cope with the ravages of trachoma in the 30,000 cases reported by the Indian Agents, and

Whereas, the Secretary of the Interior and Commissioner of Indian Affairs are greatly handicapped in their sincere efforts in behalf of the

health and welfare of these 30,000 afflicted Indians, both by shortage of skilled personnel and shortage of funds.

Therefore, Be It Resolved: That the National Committee for the Prevention of Blindness in annual meeting assembled, and representing upward of 14,500 persons, who by annual contributions in memberships or by donations, support every hopeful effort in lessening blindness, respectfully urge upon The Congress such increased financial support and additional legislation as may be required to more quickly alleviate the suffering and ravages of trachoma and minimize its incidence, and to better co-operate with all social agencies in a position to help with this promising work so well begun by the Secretary of the Interior and his Commissioner of Indian Affairs.

A campaign for the elimination of diphtheria in Montreal is well under way. The Montreal Anti-Tuberculosis and General Health League have for the past months conducted an educational campaign in the press. At the first of the year, they, with the approval of the medical societies, open two centres for active immunization. During the month of December they have been immunizing the children of the Metropolitan Life Insurance Company's agents. The Company offered this service to their agents, and the General Health League have done the work at the Company's expense.

The city of Montreal has decided to furnish diphtheria antitoxin and other biological products free to the indigents of the city.

Dr. C. L. Emerson, Director of the V. D. Division of the New Brunswick Department of Health recently paid a hurried visit to the offices of the Canadian Social Hygiene Council. Dr. Emerson was returning by way of Toronto from Chicago, where he has been spending a few weeks in Special Study. Dr. Emerson had a lengthy interview with members of the Council's staff, and spoke very favourably of its activities in New Brunswick, where in March and April last, a programme of organization was carried on. The clinics in New Brunswick are well organized and are doing very effective work. The Clinic at St. John measured by numbers of cases and treatments compares in size with the largest of such clinics in Canada. The hope was held that Social Hygiene be still further advanced in that province in the near future.

Annual Meeting of the Canadian Social Hygiene Council

The Annual Meeting of the Canadian Social Hygiene Council was held in the new quarters of the Council, Hygeia House, 40 Elm Street, Toronto, on December 11th, 1925.

The removal to new quarters which took place early in February, coupled with the desire of the officials of the Council to procure a representative gathering led to the postponement of the Annual Meeting from the established date (on or before April 30th) to the opportune time of the occasion of the meeting of the Dominion Health Council at Ottawa, which made possible the attendance of representatives from the majority of the provinces of Canada.

The meeting was presided over by the Honorable Mr. Justice Riddell, President of the Council, and there were present the Chief Health Officers from Nova Scotia, Ontario, Saskatchewan, Alberta and British Columbia, and also Dr. J. J. Heagerty, Chief of the V. D. Division of the Federal Department of Health, the officials of the Council, the staff and numerous members of the Council and specially invited friends.

The meeting opened with the address of the President. This address traced the history of the Council from its beginning as the National Council for Combating Venereal Diseases, through the period of change of name to Canadian Social Hygiene Council to its present position of popular favour, carrying on a Dominion wide programme of propaganda and education in the interests of right living and health.

Before the close of the address the President particularly stressed the difficulty which repeatedly arises in connection with the Government Grants to the provinces for the Control of Venereal Diseases, and deplored that there should be need to seemingly forever agitate for public monies to combat a disease scourge which remains the greatest blight we have to contend with.

The General Secretary, Dr. Gordon Bates, next reviewed the activities of the Council since its last meeting in December 1923. He related his difficulties in connection with maintenance of the Government Grants, and made it clear that only timely efforts saved the situation on many an occasion when grants would have resulted in much lower sums had not the need been stressed at the required times.

The Secretary's Report in addition contained numerous other matters of interest.

In February 1925, the Council took over its larger quarters and the change has already proven a wise move.

During the closing month of 1924 the Metropolitan Life Insurance Company saw fit to make its first health grant in Canada to this Council, in the amount of $15,000, to be spent in salaries and in the development of a much needed type of educational work. This beneficent grant has made possible the appointment of a Chairman and Secretary of a new Division of Education, as also the appointment of two organizers, one for each of Western and Eastern Canada, and a Secretary for the City of Montreal.

During the year under report, the Council had been represented at the League of Nations Meeting in Geneva, as also at Wembley, England.

Owing to the fact that this meeting was virtually a postponed annual meeting, the Secretary's report was curtailed to the extent that it reviewed the activities of the Council only to April 30th, 1925.

The Auditor's Report was next presented by Dr. C. P. Fenwick. The year under report showed a small operating deficit, but the surplus account, due to receipt of outstanding accumulated revenues, showed a very substantial increase. The financial status of the Council was reported as very sound.

Mrs. A. A. Perry, of the Publicity Division of the Council reported on behalf of the Publicity Committee. A Monthly Bulletin "Social Health" launched in 1924, was being liberally distributed throughout Canada, and was increasing its usefulness from month to month. Mrs. Perry also reported from the publicity angle on the worth of the exhibits of the Council, the value of the Panel of Speakers, and the courtesy being shown by the Canadian Press and Newspapers generally.

Mr. A. D. Hardie, M.A., reported for the Division of Education, of which he is Secretary. This Division was still largely in a formative stage on April 30th, but at this date had already practically completed its organization, outlined its policy and put on a two months' Programme of Education in Toronto.

The presence of many of the Provincial Health Officers of Canada afforded a unique opportunity of hearing many reports and suggestions of interest from the provinces. The following officers reported for their provinces:

Dr. A. C. Jost—Nova Scotia
Dr. W. C. Laidlaw—Alberta
Dr. M. M. Seymour—Saskatchewan
Dr. H. E. Young—British Columbia.

Each of these gentlemen reported, heartily approving of the Social Hygiene activities in their provinces. Many matters of medical interest were also brought by them from their respective provinces.

In the absence of Dr. Desloges, Dr. Bates reported for Quebec, stating that a Council has been formed in Montreal, and that a Secretary had been provided by the Canadian Council.

On behalf of the Ontario Council, Miss E. Hewson, Ontario Secretary, presented a detailed report. Miss Hazel Todd, Secretary for Ottawa, outlined the work in that city, and Dr. C. P. Fenwick reported for the Council in Toronto.

Dr. L. A. Pequegnat reported for New Brunswick where he was engaged during the months of March and April of 1925.

Following the adoption of these reports, certain amendments to the Constitution were dealt with. Following the election of officers for the coming year the meeting was adjourned.

Book Reviews

A Health Survey of 86 *Cities*, by the Research Division of the American Child Hygiene Association.

This survey was made during the first six months of 1924. The information contained therein is based upon personal studies of the cities by five experienced Public Health Administrators.

The report is an exhaustive and most valuable one, and deals with the subject in four distinct sections: First—"The conduct of the investigation" in which the purpose and the methods of study and analysis of information are explained. Second—"The Administrative Practices in Public Health" in which health activities are discussed critically, under such chapter headings as, "Organization of Health Departments", "Vital Statistics", "Communicable Disease Control", "Maternity Hygiene", "Hygiene of the School Child", "Sanitation", "Public Health Nursing", "Private Agencies", etc. Third—"Sketches of Health Work in each City of 50,000 Population", containing a brief account of health work in each of the 86 cities, and a description which enables the city to find itself in the picture. Fourth—"A proposed Plan of Community Health Organization for a City of 50,000 Population" which contains constructive suggestions, showing how a typical city of this size might direct its energies productively in the field of Public Health.

The Report brings out quite clearly the fact that the health of the child is dependent upon the provision which the city makes for its entire Public Health Programme.

There is evidence that every one of the 86 cities recognizes in some degree at least the responsibility of a community as a whole, for the health of its child population. The extent to which its belief is carried into practice varies widely, however. At one extreme is a city which has but one full-time employee in its health department; at the other extreme are several cities with twenty full-time employees.

The daily health habits of 35,000 children in these 86 cities were learned by means of special tests.

There is evidence of much need of standardization of health work, with the object of doing away with practices that cost out of proportion to their return. One of the most important needs is the full-time health officer, with a background of training in health administration and community educational methods, and better, with several years experience in actual bedside practice. With leaders of this type, ade-

quately compensated for their services, it is felt that Health Work can be made much more effective at no great increase in cost.

I would strongly recommend this book to all interested, not only in child welfare, but in public health administration generally.

C. J. H.

Ontario Public School Health Book. By Donald T. Fraser, M.B., and George D. Porter, M.B. Copp Clarke Company. Authorized by Minister of Education of Ontario.

This volume introduces health teaching into the Ontario schools in a way that should prove of tremendous benefit not only to the children themselves but to the others in the homes from which they come.

In the first section, comprising some nineteen short chapters entitled "Health Habits," the latest established facts in physiology are placed before the children in a simple yet impressive manner. Attention is definitely directed to the important factor underlying the various health habits, as, for example, in the chapter on care of the teeth, where the emphasis is laid on the diet rather than the use of the toothbrush. Diet, sunshine, exercise and fresh air are closely linked together by the authors in such a way as should interest the child in his own well-being.

In Section II, "The Prevention of Disease," the authors have very happily presented an introduction to the subject of bacteriology and immunity in terms that the school child can understand. Well planned chapters follow on the prevention of such diseases as typhoid fever, smallpox, tuberculosis and goitre.

Section III deals with accidents and emergencies, giving an outline of the first aid that everyone should be able to administer.

Too many of our health books have featured "health rules" and "health games," in which children are asked to do unimportant "health chores" to the neglect of the more important items in the health programme. The authors have rendered a distinct service to public health in putting into the hands of the Ontario school children this volume, which, while placing the emphasis on the essential points, is written in such a manner that its content can be appreciated by the ordinary school child.

It is a book that we should like to see authorized by all Departments of Education for use in every public school in Canada.

Practical Dietetics, by Alida Francis Pattee. Published by A. F. Pattee, Mount Vernon, New York.

It is always a pleasure for those interested in the health of individuals or nation to read or review a really first rate book on dietetics, because

bio-chemistry and scientific feeding are rapidly assuming, if they have not already assumed, a position at the very forefront of preventive medicine.

Practical Dietetics is a first rate book, for the proof of all books is in the reading, and this popular treatise on food has just gone into its fourteenth edition. Its author and publisher is Alida F. Pattee, a distinguished dietician who has held positions as instructor in dietetics in a round dozen of the most prominent hospital Training Schools in the United States and Canada, and who is indebted for valuable co-operation in preparing its contents to a long list of notable professional men and women, at present occupying college chairs or hospital positions in well known institutions on this continent.

In Part I the Principles of Nutrition and Food Preparation are laid down with scientific care and thoroughness. Part II is given over to demonstrating the practical application of these principles, and in this section there is included under the various sub-divisions a large number of tried out recipes for the cooking of Animal Foods, Vegetable or Plant Foods, Nutritious Desserts and Beverages. Part III deals with Diet—Therapy under the three divisions of Feeding the Sick, Hospital Diets, Diet in Disease and Diet for Special Bodily Conditions.

This section is exceedingly valuable because of the clear cut, definite information offered the nurse in charge of fever cases, diabetics, tubercular patients, those afflicted with high or low blood pressure, anaemia or diseases of the stomach, liver, nervous system, kidney or skin, and for those recovering from surgical operations. Special diets are outlined too, for motherhood, infant feeding, feeding of young children, and for old age. While *Practical Dietetics* is a treatise aimed at and written for the trained nurse, it is not too technical to be of general usefulness to the intelligent housewife or the average mother.

There is a rapidly increasing number of women in the home who demand the best available information as to how to feed their families in the right way. To them, as well as to the trained nurse, or the hospital training school instructor, *Practical Dietetics* is highly commended as a remarkably complete compendium of authoritative knowledge.

Editorial

THE ANNUAL CONVENTION

This year the Canadian Public Health Association, the Canadian Social Hygiene Council and the Ontario Health Officers' Association will meet in a joint convention in Toronto. It was expected that this important public health gathering would be held during the first week in May, but owing to unforeseen circumstances it may be necessary to postpone the meeting until early in June. A final announcement as to date will appear in the next issue of the JOURNAL.

The resources of the three organizations named will be available to make a noteworthy success of this occasion. Outstanding speakers from distant points will be present. Vital issues in health organization will be brought forward for discussion, and some meetings will be of a public character. All members of the three organizations concerned should make it a point to plan definitely now to be present. This Convention should be the largest and most important health meeting held in Canada during recent years.

THE GREATEST NEED

All of us are agreed that health is an issue of paramount importance. Everyone knows that in the ideal community all citizens should think first of what can and should be done to conserve the health of the people. But in spite of this we lag behind, and anything from the price of carpet tacks to Bolshevism in Russia is likely to engage the discussion of legislators and people alike to the exclusion of that most vital of issues—whether we here in Canada can develop a fine, virile, healthy race living out the allotted span of life with all the physical and mental efficiency nature intended us to have.

It would seem that the intentions of all of us are good. We believe in the ideal of a fine healthy race, and would fight to attain such an ideal were the effort not too much trouble.

But on the whole the dead hand of specialism is upon us, and whether doctors, lawyers, merchants or school teachers, we proceed along our traditional paths—often to our own destruction. The only thanks the reformer gets is too often a gesture of annoyance towards the intruder who would interfere with the activities of a generation whose motto is 'stand pat.'

Many of us would like to see Canada organized for health. We know that Canada is not organized for health as she should be. Dominion leadership is limited and constantly in danger. Insufficient interest is shown in Parliament. Money is wasted to cure when much less money would suffice to prevent. And yet we talk and only talk.

The time is ripe for giving a great impetus to the progress of health activities in the Dominion. People are beginning to realize the value of organization for health. The question is how to destroy the forces of inertia which come from our very social organizations.

This important matter receives too little attention and thought from health officers themselves. Too frequently the PUBLIC HEALTH JOURNAL brings up such matters editorially without a sign of sympathetic response from its readers in various parts of Canada. The JOURNAL suggests that letters from its subscribers, lay and medical, would be extremely useful. Who will be the first to take part in what should be a most useful discussion at this time?